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AUTHOR Barsness, Linda; And Others
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ABSTRACT

A timeout stimulus control procedure for reducing self-stimulation and disruptive behaviors in autistic children was examined. The three subjects were diagnosed as autistic, exhibiting numerous behaviors incompatible with learning. Severe hand biting, inappropriate noises, and prolonged tantrums were the target behaviors linked with the timeout stimulus control procedure in this study. The timeout stimulus control areas were within a special education classroom setting. No restrictive walls or partitions demarcated these areas, but the timeout areas were distinctively colored. When the target behaviors were linked with simple verbal commands and extinction procedures, a significant decrease was observed. The timeout stimulus control procedure further reduced the target behaviors to a stable low level. This study demonstrates the effectiveness of non-intrusive procedures which can be used in a classroom setting to eliminate severe disruptive behaviors in autistic children. (Author)

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Eliminating Disruptive Behavior Through Timeout Stimulus Control in Autistic Children

By

Linda Barsness

Anneke Thompson

Marilyn Warrington, Ph.D.

Hans Christian Andersen School, Unit D
Minneapolis, Minnesota

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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INTRODUCTION

Increasing social and legal constraints in education have made it necessary to devise less intrusive procedures for eliminating stereotypies and disruptive behaviors typically exhibited by autistic children. Various procedures have been employed for reducing such behaviors. Self-stimulation and tantrum behaviors in autistic children were modified by using painful skin shock (Lovaas, Schaeffer, Simmons, 1965). Bucher and Lovaas (1968) employed a punishment procedure of slapping to eliminate self-stimulation in autistic children. Shouting along with shaking or slapping were also used to suppress self-stimulation in autistic children (Risley, 1968; Koegel, Firestone, Kramme, and Dunlap, 1974; Koegel and Covert, 1972). Foxx and Azrin (1973) used an overcorrection procedure to eliminate self-stimulation in autistic and retarded children.

Self-injurious behaviors exhibited by some autistic children may interfere with learning social responses as well as causing physical damage to the child's body. For eliminating self-injurious behaviors in autistic children extinction (Lovaas and Simmons, 1969), painful electric shock (Lovaas and Simmons, 1969; Tate and Baroff, 1966), and reinforcement of incompatible behaviors (Lovaas, Freitag, Gold, and Kassorla, 1965) have been used. Some autistic children exhibit temper tantrums of such severity that they injure themselves during the tantrum. Timeout (Wolf, Risley, and

Mees, 1964) and reinforcement of incompatible behaviors (Peterson and Peterson, 1968) are two procedures used for eliminating severe tantrums in autistic children.

Other less aversive methods have been tried, such as stimulus change and stimulus control procedures. Tantrum behaviors of a retarded girl were modified by changing the complexity of materials (Sailor, Guess, Rutherford, and Baer, 1968). A stimulus control room was used to reduce public masturbation in a five-year-old girl (LaVigna and Donnellan-Walsh, 1976). Head-banging was decreased with a stimulus control procedure using a ringing bell paired with the head-banging and gradually fading the bell ringing (Kozloff, 1975). A relatively less intrusive procedure has been investigated by Foxx and Shapiro (1977) which uses a timeout ribbon. This is a nonexclusionsry timeout procedure for eliminating disruptive behavior in the classroom.

The present study describes a relatively non-intrusive procedure for eliminating self-stimulatory and disruptive behaviors in autistic children. In the present procedure a timeout area is used with no restrictive walls or partitions, located in the classroom. Inappropriate behaviors are brought under the stimulus control of the distinctively colored timeout areas. The results are compared with other procedures such as verbal commands and extinction.

The three subjects in the study have been diagnosed autistic or autistic-like. They were enrolled in one classroom

of a public school autism program. The children exhibited severe self-stimulation, tantrum, and self-injurious behaviors which were incompatible with appropriate social and academic learning.

The classroom operated on a token economy in which the children earned tokens for pre-academic, academic, and adaptive social behaviors. Tokens were exchanged for social, edible, tangible or other reinforcing activities, such as listening to records or play time. Tokens were earned and exchanged through out the entire day.

In this study the stereotypic and/or disruptive behaviors lead to placing the child in a timeout stimulus control area. The timeout stimulus control areas were located within the classroom, adjacent to the children's work areas. They were defined by brightly colored sheets of plastic taped to the contrasting gray-brown carpet. This procedure is a combination of timeout and stimulus control because the children were removed from the opportunity for reinforcement but were allowed to display their self-stimulatpry or disruptive behaviors in the specified areas.

EXPERIMENT I

Subject

B is a nine-year-old autistic girl. While she exhibits receptive language, she has no expressive language. B exhibited frequent temper tantrums, during which she screamed loudly,

stomped her feet and pulled at or occassionally removed some of her clothes.

Method

The target behavior for B was tantrumming, defined as screaming with or without stomping and pulling at her clothes. After a four day baseline, the first experimental manipulation was extinction or ignoring tantrumming whenever it occurred. In the second manipulation, B was directed to a timeout stimulus control area contingent upon a tantrum. The timeout stimulus control area was defined by a 5x6 foot clear plastic sheet with red and green stripes taped to the floor. Later it was defined only by white tape on the carpet. In this procedure, B was told, "no crying here" (in the learning area) and was taken to the marked-off area and told, "cry here." After several weeks, B was directed to the timeout area by being told, "no crying here, cry there," and the experimenter pointing to the defined stimulus control area. B remained in the timeout stimulus control area for one minute. As soon as she was quiet after one minute, she was allowed to return to the classroom work area. She was told, "You're quiet, you may come back to your chair." A reversal to baseline condition was conducted for four days and then timeout simulus control procedures were reinstated.

Results

During the four day baseline, B exhibited a mean number of 88.25 tantrums per 5½ hour day. The extinction procedure

resulted in a decrease to a stable mean of 13 tantrums per day over four weeks. Although the extinction procedure reduced the behavior, the intervention was changed because the loudness of the tantrums, when they did occur, disturbed the adjacent classrooms. The timeout stimulus control procedure further reduced the behavior progressively to a stable mean of .5 responses per day during the final week of this phase. On reversal, the second baseline condition yielded a mean of 4.75 tantrums per day. When timeout stimulus control procedures were reinstated, the target behavior decreased to zero for a period of eleven days. (See figure 1.)

EXPERIMENT II

Subject

J, an eleven-year-old boy, has been diagnosed autistic. J is echolalic with some appropriate speech. J displayed disruptive behaviors incompatible with learning, such as (1) inappropriate vocalizations and delayed echolalia, and (2) hand biting of such severity as to callous the area bitten.

Method

A multiple baseline investigation of the efficacy of the timeout stimulus control procedure was used. The target behaviors sequentially stucied were hand biting, inappropriate noises and echolalic speech.

Phase 1. A baseline of five days was taken on J's hand biting. The first intervention consisted of telling J "hands down" contingent upon self-biting. After seven weeks of this procedure a reversal to baseline was conducted for three days. A timeout stimulus control procedure was then instituted. The timeout stimulus control area for J was a 3x4½ foot red and white checked plastic sheet with a chair on it. Hand biting which was accompanied by a moaning sound and lasting two seconds or longer was consequated with this procedure. Whenever the hand biting occurred, J was told, "no biting," taken to the chair in his timeout stimulus control area and told "bite here." Later he was directed to his area by being told, "no biting here, go to your chair and bite," with the experimenter pointing to the chair in the designated area. He remained in this area for one minute and was told that he could return to the work table upon discontinuing biting.

Results

A mean of 153.4 hand biting responses per day was observed during baseline. The first intervention, telling J, "hands down;" resulted in a decrease to a stable mean of 32.8 responses per day. The return to baseline resulted in a slight increase to a mean of 40 bites per day. During the timeout stimulus control procedure, biting decreased to a mean of 5.6 responses per day, with a low of zero responses per day. (See figure 2.)

Phase 2. The second behavior consequated with timeout stimulus control procedure was inappropriate speech, defined as both intelligible speech, inappropriate to the situation (e.g., "I'm sorry, I'm sorry" or "fish sticks") and delayed echolalia (e.g., "Welcome to the Andy Griffith Show"or "Westinghouse, Westinghouse"). Included in this definition were bizarre noises which were inappropriate and unintelligible. Following a baseline of three days, the timeout stimulus control procedure was employed as with hand biting. J was taken to the timeout stimulus control area first for inappropriate noises which lasted 10 seconds or longer, and later for inappropriate noises which were 3 seconds. The verbal cue for removal to the timeout stimulus control area was "no silly noises" and "make silly noises here." J was taken to the marked-off area and later was verbally directed to go to the chair in the designated area.

Results

During baseline a mean of 333 inappropriate verbal responses per day was observed. With the implementation of the stimulus control procedure, the mean number of responses dropped to a mean of 70.6 per day during the first nine days when noises lasting 10 seconds were consequated. When inappropriate verbal responses of 3 seconds were consequated, the behavior decreased to a mean of 7.4 responses per day. (See figure 3.)

EXPERIMENT III

Subject

M, an eight-year-old autistic boy, is nonverbal and has poor receptive language. He frequently displayed inappropriate noises, including squeals, tongue clicks, and gutteral sounds. He also exhibited tantrums characterized by loud screaming, rigid standing or sitting posture and holding or hitting his head.

Method

A multiple baseline procedure was conducted with the target behaviors being tantrums and inappropriate noises.

Phase 1. A baseline of five days was conducted on M's inappropriate noises. The timeout stimulus control procedure was instituted, using a 3x4½ foot bright green plastic sheet with a chair on it to designate the timeout stimulus control area. When M exhibited inappropriate noises, he was told, "no noises here," taken to the chair in the specified area and told, "make noises here." After a week, he was told, "no noises here, make noises on the chair," and was directed to the timeout stimulus control area. He remained in this area for one minute and was told to come back to his work table when he was quiet.

Results

During baseline, M exhibited a mean number of 54 noises per day. The timeout stimulus control procedure initially reduced the behavior to a mean of 13 noises per day and

further reduced the behavior to a mean of 3 noises per day during the last week of the procedure. (See figure 4.)

Phase 2. Tantrum behavior was the second behavior consequated with the timeout stimulus control procedure. Following a baseline period of five days, an extinction procedure was conducted for three weeks. Whenever the tantrum behavior occurred the experimenter turned away from the subject until the behavior stopped. A timeout stimulus control procedure was then instituted using the same procedures as employed with the inappropriate noises. M was told, "no crying here, cry in the chair," and was directed to the designated area.

Results

M exhibited a mean of four tantrums per day during the five day baseline period. With the extinction procedure an increase to a mean of 8 tantrums per day was observed during the first week. The behavior then decreased to a mean of 4 tantrums per day in the second week and increased again to a mean of 6 responses per day in the third week. The timeout stimulus control procedure initially resulted in a decrease of the tantrum behavior to a mean of 3 tantrums per day. The behavior was further reduced to zero tantrums per day for a seven day period at the end of the procedure. (See figure 5.)

DISCUSSION

The sterotypic, self-injurious, and tantrum behaviors of three autistic children were recorded during baseline and during various interventions, including extinction, verbal instructions, and timeout stimulus control. The extinction and verbal instruction procedures used were effective in reducing the target behaviors. The timeout stimulus control procedure further decreased the maladaptive responses to low stable levels.

The timeout stimulus control areas were highly discriminable and had no restrictive physical barriers. In comparison to using a timeout room, this procedure provided a less intrusive method for suppressing the target behaviors. The children were specifically told to perform their behaviors when sent to the timeout stimulus control areas but they were not differentially reinforced for their responses in the designated areas as is done in stimulus control procedures (LaVigna and Donnellan-Walsh, 1976). On several occasions two of the children were observed going to their timeout stimulus control areas by themselves and performing their target behaviors for a minute or longer.

The timeout stimulus control procedure was effective in reducing the rate of disruptive and stereotypic behaviors exhibited by the three autistic children in one classroom. The maladaptive behaviors were of varying degrees of intensity and were all suppressed to low stable levels. Other more

intrusive methods have been commonly used to reduce such behaviors in autistic children and have been effective in reducing the behaviors. This study is unique in that it describes a response contingent procedure using a highly discriminable, timeout stimulus control area with no physical barriers so as to allow more appropriate behavior to occur and be taught.

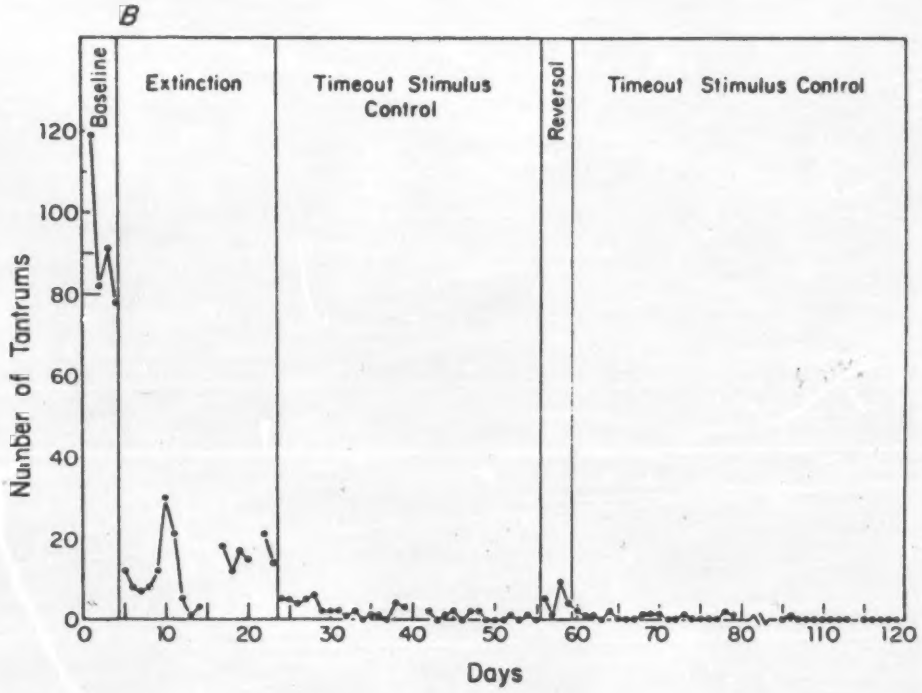

Figure 1. Daily frequency of tantrums for B across Baseline, Extinction, Timeout Stimulus Control, Reversal, and return to Timeout Stimulus Control procedures.

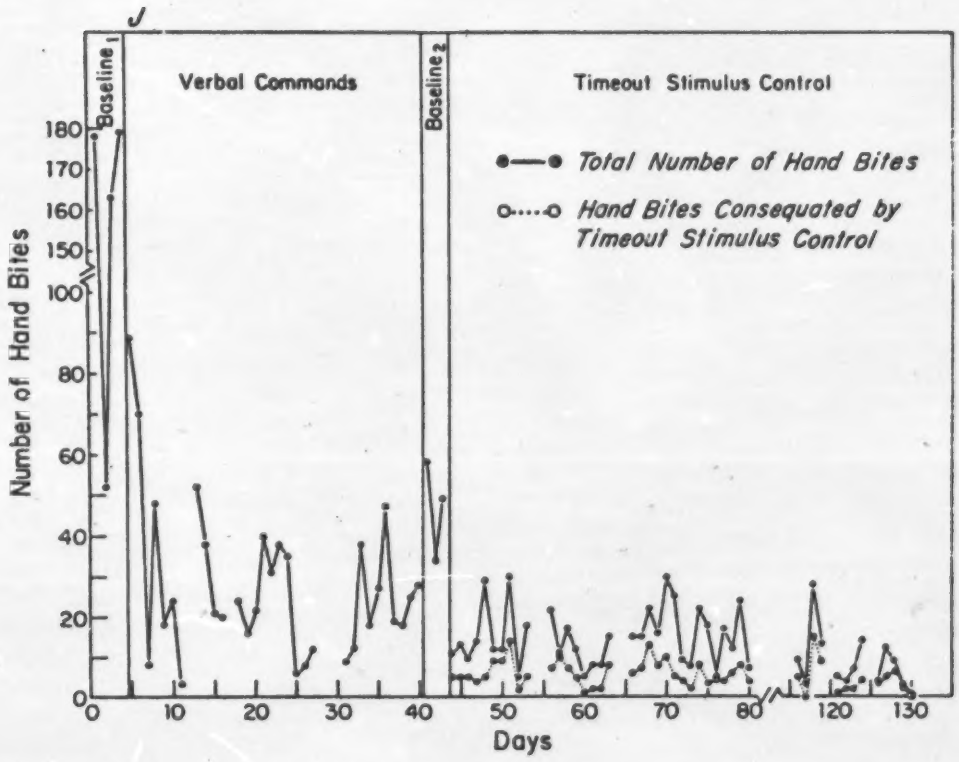

Figure 2. Daily frequency of self-abusive hand biting for J. over Baseline, Verbal Command (telling J. "hands down" contingent upon hand biting), return to Baseline condition, and Timeout Stimulus Control intervention.

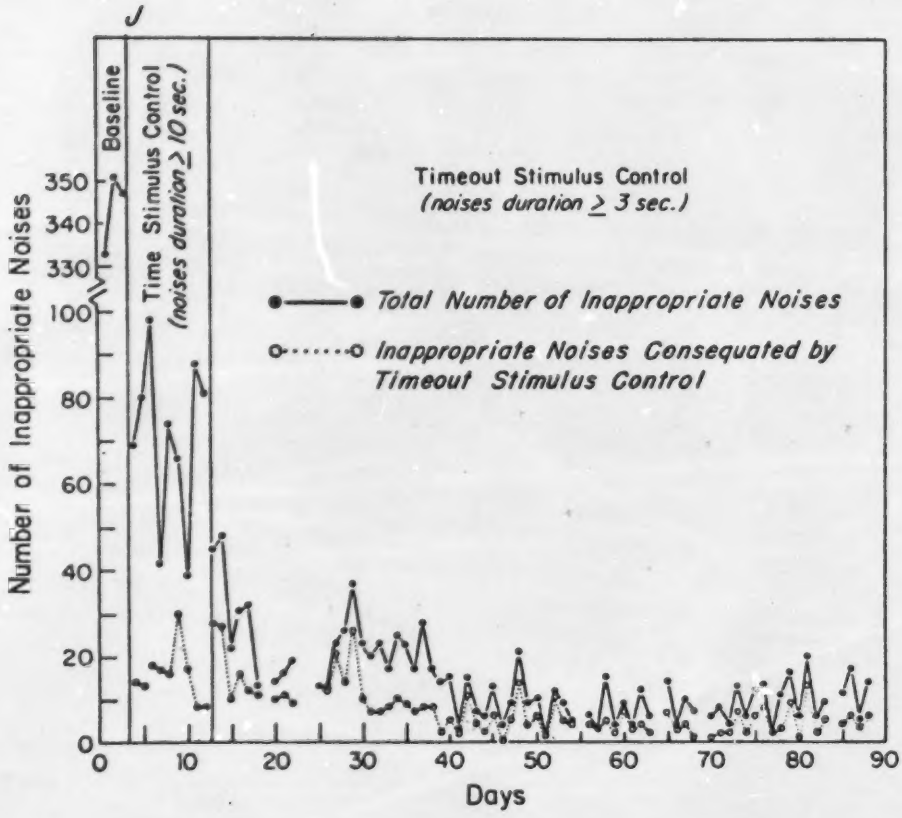

Figure 3. Daily frequency of inappropriate noises for J. across Baseline, Timeout Stimulus Control procedure contingent upon noises of 10 seconds duration or longer and Timeout Stimulus Control procedure used for noises of 3 seconds or longer in duration.

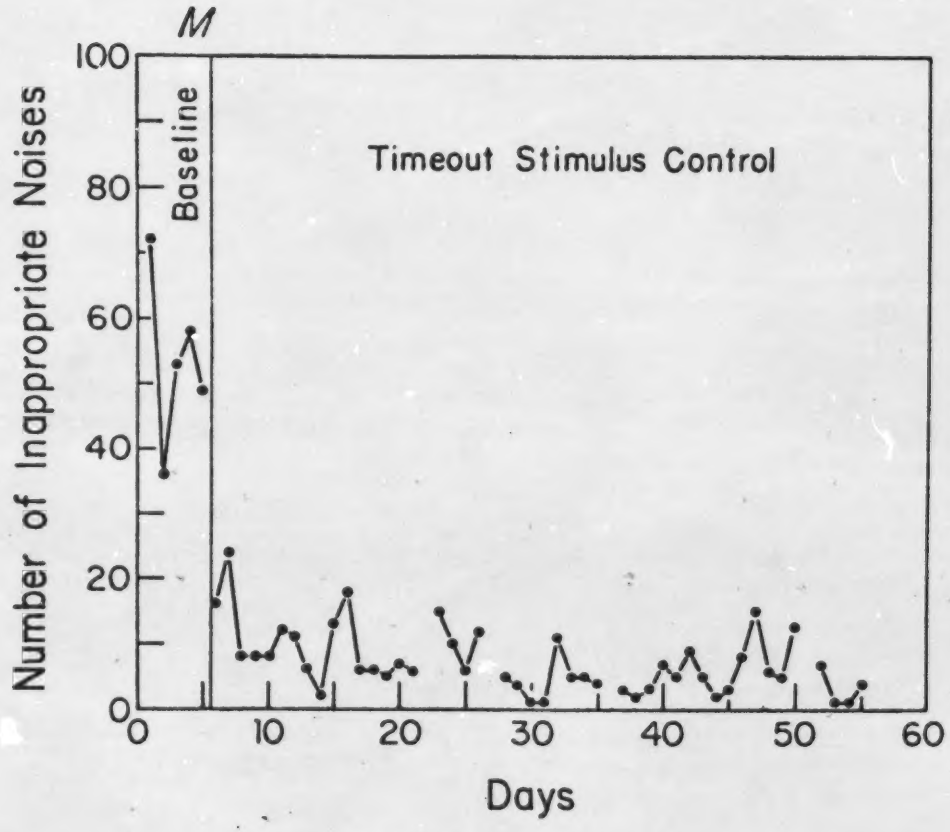

Figure 4. Daily frequency of inappropriate noises for M. across Baseline and Timeout Stimulus Control procedures.

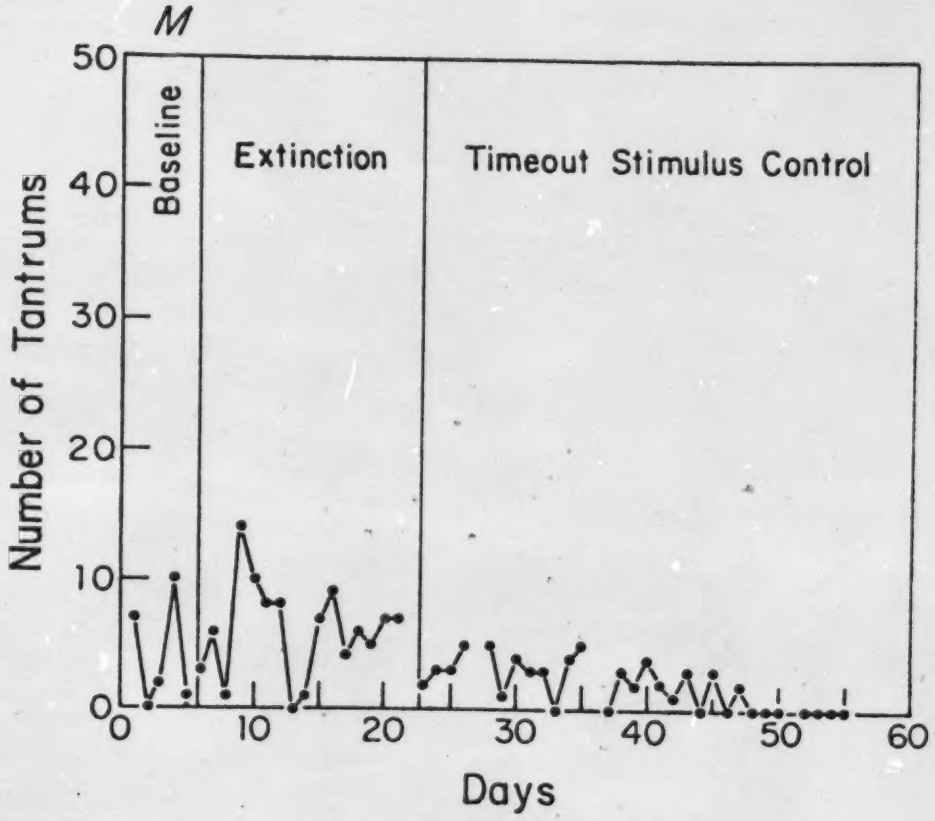

Figure 5. Daily frequency of tantrums for M. across Baseline, Extinction, and Tineout Stimulus Control procedures.

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